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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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RAYMOND Y. CHAN 108 N. YNEZ AVE., SUITE 128 MONTEREY PARK, CA 91754			EXAMINER JOHNSON, CARLTON	
			ART UNIT 2136	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/693,224

Applicant(s)

SHAO, TONG

Examiner

Carlton V. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is responding to application papers filed **6-25-2007**.
2. Claims **14 - 30** are pending. Claims **1 - 13** have been cancelled. Claims **14 - 30** are new. Claims **14, 26** are independent.

### *Response to Arguments*

3. Applicant's arguments filed 6/25/2007 have been fully considered but they are not persuasive.

- 3.1 Applicant argues the absence of disclosure for claim limitations within referenced prior art. (see Remarks Pages 7-9)

The amendment filed on 6-25-2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material, which is not supported by the original disclosure, is as follows:

Applicant has cancelled and drafted a set of claims with limitations that are not disclosed within the specification or the original claims (the original filed application). (see Remarks Page 7-8)

There is no disclosure that the two computer systems are "securely separated". The term "securely separated" is disclosed in referenced to a hard disk but not a computer system. The term is not disclosed within the specification and original claims in referenced to a computer system. There is no disclosure that a computer system has

"sole access" to the operational environment. The term is not disclosed within the specification and original claims in reference to a computer system. There is no disclosure for the term "prohibit to mix" in the specification or original claims.

The term, "operating system", is only disclosed in prior art background. The summary of invention section does not mention the term "operating system" at all. There is disclosure of two computer systems but no mention of the operating system software for the two systems. A computer system requires an operation system of some sort in order to be operational. The referenced prior art discloses two computer systems, a server computer system and a client computer system.

Applicant is required to cancel the new matter in the reply to this Office Action.

The claimed invention is a system that enables the capability to save a state for a computer system, and the capability to switch between a previous state and a next state. The security mechanism disclosed within the invention is a check for user authentication before any attempt to allow a switch of system status. Applicant has added claim limitations that further limit security aspects of the claimed invention with no disclosure in the specification or the original claims for these added security features.

If applicant feels there is sufficient disclosure in the specification or the original claims for the set of terms previously mentioned, please indicate the required citations for confirmation.

3.2 The referenced prior art discloses a non-interrupt mask to process a command.  
(see Remarks Page 9) (see Heider col. 14, lines 15-17: non-maskable interrupt (i.e.

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NMI) to perform request (i.e. command))

3.3 There were no cited and non-applied references. (see Remarks Page 9)

3.4 The examiner has considered the applicant's remarks concerning an apparatus for secured switching computing system status. The CPU responds to the NMI interrupt signals and processes a secured switch control program in order to safely switch between different operational statuses. Applicant's arguments have thus been fully analyzed and considered but they are not persuasive.

After an additional analysis of the applicant's invention, remarks, and a search of the available prior art, it was determined that the current set of prior art consisting of Heider (5,276,863) discloses the applicant's invention including disclosures in Remarks dated June 25, 2007.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims **14 - 30** are rejected under 35 U.S.C. 102(e) as being anticipated by **Heider et al.** (US Patent No. **5,276,863**).

**Regarding Claim 14**, Heider discloses a computing system, comprising:

- a) a central processing unit; (see Heider col. 6 , lines 29-32: CPU, processing unit)
- b) a first and a second operating system operatively communicating with said central process unit, wherein said first operating system comprises a first storage unit storing first data set, and said second operating system comprises a second storage unit storing second data set; (see Heider col. 6 , lines 32-36: server and client system (first and second operating systems), standard peripherals for computer system: processor, memory, hard disk) and
- c) a switch device operatively communicated with said central processing unit to operate said computing system between a first status and a second status, wherein in said first status, said central processing unit allows uninterrupted and sole access to said first data set of said first operating system while prohibiting access of said second data set of said second operating system, wherein in said second status, said central processing unit is switched to allow uninterrupted and sole access to said second data set of said second operating system while prohibiting access to said first data set from said first operating system, so that said computing system is adapted to operate between said two status independently with each other and with maximum security between said first and said second status. (see Heider col. 5, lines 53-63; col. 13, lines 48-49: perform switch, from one state to another state; col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) to perform request (i.e. command); col. 17, line 63 - col. 18,

line 4: command capability; col. 13, lines 48-49: switch (i.e. on-off, ON state, and console state) capability; col. 15, lines 64-67: save state information for resumption)

No disclosure of independent status, data set, prohibiting access, and sole access.

**Regarding Claim 15**, Heider discloses the computing system, as recited in claim 14, wherein said switch device comprises: a status switch command input unit communicating with said switch unit and adapted to trigger an input signal for switching between said first status and said second status, a secured switch control unit communicating with said command input unit in such a manner that when said input signal is triggered, said secured switch control unit is adapted to generate a switch control signal which is then transmitted to said central processing unit for initialing a switching task between said first status and said second status of said computing system, and a connection switch unit communicating with said secured switch control unit for receiving an external switching command for switching between said first and said second status, wherein said external switch command is then transmitted to said secured switch control unit for initializing said corresponding switch control signal. (see Heider col. 17, line 63 - col. 18, line 4: command input capability; col. 13, lines 48-49: switch (i.e. on-off, ON state, and console state) capability; col. 15, lines 64-67: save state information for resumption, capability to switch between a first status state and a second status state; col. 5, lines 44-46: request processing) and controls the switch unit

to switch from the present status to the previous status; col. 14, lines 18-24; col. 14, lines 39-40: switch operation completed)

No disclosure of independent status, data set, prohibiting access, and sole access.

**Regarding Claim 16**, Heider discloses the computing system, as recited in claim 14, wherein said first storage unit of said first operating system comprises a first random access memory module, a first display memory module, and a first hard disk having a first predetermined capacity for storing and processing said first data set, wherein said second storage unit of said second operating system comprises a second random access memory module, a second display memory module, and a second hard disk having a second predetermined capacity for storing and processing said second data set, wherein said first data set and said second data set are prohibited from mixing with each other so as to independently separate said first and said second operating system in accordance said first and said second status of said computing system. (see Heider col. 6, lines 23-27; col. 6, lines 29-36: two operating system (server system, client system), two sets of standard peripherals, processors, memory, hard disks, display monitors).

No disclosure for claims limitations: independently separate, data set, prohibited from mixing, sole access.

**Regarding Claim 17**, Heider discloses the computing system, as recited in claim 15,



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wherein said first storage unit of said first operating system comprises a first random access memory module, a first display memory module, and a first hard disk having a first predetermined capacity for storing and processing said first data set, wherein said second storage unit of said second operating system comprises a second random access memory module, a second display memory module, and a second hard disk having a second predetermined capacity for storing and processing said second data set, wherein said first data set and said second data set are prohibited from mixing with each other so as to independently separate said first and said second operating system in accordance said first and said second status of said computing system. (see Heider col. 6, lines 23-27; col. 6, lines 29-36: two operating system (server system, client system), two sets of standard peripherals, memory, hard disks, display);

No disclosure for limitations: independent, securely separated, sole access, data set, prohibiting from mixing with each other.

No disclosure for claims limitations: independently separate, data set, prohibited from mixing, sole access.

**Regarding Claim 18**, Heider discloses the computing system, as recited in claim 16, wherein said connection switch unit further comprises an identification verification unit which is adapted to verify an identity of a user giving said external switching command so as to ensure said switching between said first status and said second status is carried out by an authorized and legitimate user. (see Heider col. 14, lines 26-34: authorization and authentication performed (i.e. user identity, ID verification), state

switch only allowed if authorization succeeds)

**Regarding Claim 19**, Heider discloses the computing system, as recited in claim 17, wherein said connection switch unit further comprises an identification verification unit which is adapted to verify an identity of a user giving said external switching command so as to ensure said switching between said first status and said second status is carried out by an authorized and legitimate user. (see Heider col. 14, lines 26-34: authorization and authentication performed (i.e. user identity, ID verification), state switch only allowed if authorization succeeds)

**Regarding Claim 20**, Heider discloses the computing system, as recited in claim 18, wherein said switch device comprises a status switch command input unit communicating with said switch unit and adapted to trigger an input signal for switching between said first status and said second status (see Heider col. 5, lines 44-46; col. 16, lines 15-17: request/response (i.e. command) mechanism for switch; col. 13, lines 48-49: state switch capability) (see Heider col. 5, lines 53-63; col. 13, lines 48-49: perform switch, from one state to another state), a monitoring unit communicating with said status switch command input unit, a read only memory, loaded with a predetermined interrupt service program for commanding switching between said first status and said second status, communicating with said monitoring unit and said status switch command input unit (see Heider col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) to perform request (i.e. command)), and a switch unit communicating with said

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monitoring unit for receiving an external switching command, in such a manner that when said external switching command is received, said status switch command input unit triggers a input signal (see Heider col. 5, lines 44-46: request processed) which is then transmitted to said monitoring unit for initiating a switch control signal to said central processing unit to execute switching between said first status and said second status in accordance with said interrupt service program. and controls the switch unit to switch from the present status to the previous status. (see Heider col. 14, lines 18-24; col. 14, lines 39-40: switch operation completed)

**Regarding Claim 21**, Heider discloses the computing system, as recited in claim 19, wherein said switch device comprises a status switch command input unit communicating with said switch unit and adapted to trigger an input signal for switching between said first status and said second status (see Heider col. 5, lines 44-46; col. 16, lines 15-17: request/response (i.e. command) mechanism for switch; col. 13, lines 48-49: state switch capability; col. 5, lines 53-63; col. 13, lines 48-49: perform switch, from one state to another state), a monitoring unit communicating with said status switch command input unit, a read only memory, loaded with a predetermined interrupt service program for commanding switching between said first status and said second status, communicating with said monitoring unit and said status switch command input unit (see Heider col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) to perform request (i.e. command)), and a switch unit communicating with said monitoring unit for receiving an external switching command, in such a manner that when said external switching

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command is received (see Heider col. 5, lines 44-46: request processed), said status switch command input unit triggers an input signal which is then transmitted to said monitoring unit for initiating a switch control signal to said central processing unit to execute switching between said first status and said second status in accordance with said interrupt service program. and controls the switch unit to switch from the present status to the previous status. (see Heider col. 14, lines 18-24; col. 14, lines 39-40: switch operation completed)

**Regarding Claim 22**, Heider discloses the computing system, as recited in claim 20, further comprising a set trigger electrically connected to said monitoring unit for sending out a non-interruptible NMI signal to said central processing unit, and a reset trigger electrically connected to said monitoring unit in such a manner that when switching of said two statuses is finished, said monitoring unit is adapted to send a signal to said reset trigger, which then reset said set trigger and mask said switching function of said connection switch unit for preventing illegitimate switching between said two statuses. (see Heider col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) utilized to process command(s); col. 14, lines 35-38: authorization fails, reset saved state (i.e. ON state, console state); col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) utilized during reset operation)

**Regarding Claim 23**, Heider discloses the computing system, as recited in claim 21, further comprising a set trigger electrically connected to said monitoring unit for sending

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out a non-interruptible NMI signal to said central processing unit, and a reset trigger electrically connected to said monitoring unit in such a manner that when switching of said two statuses is finished, said monitoring unit is adapted to send a signal to said reset trigger, which then reset said set trigger and mask said switching function of said connection switch unit for preventing illegitimate switching between said two statuses. (see Heider col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) utilized to process command(s); col. 14, lines 35-38: authorization fails, reset saved state (i.e. ON state, console state); col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) utilized during reset operation)

**Regarding Claim 24**, Heider discloses the computing system, as recited in claim 22, wherein said secured switch control unit comprises a memory adapted to store control command to complete switches between said first status and said second status, and a unit forbidding to access read-only memory in the computing system, to ensure that the only programs stored in the stated memory can be executed in the switching process. (see Heider col. 13, lines 48-49: switch operation performed; col. 17, lines 13-16; col. 16, lines 44-48: switching operations performed by software, programs; col. 6, lines 29-40: console (i.e. CPU) program, in console memory (i.e. ROM), not in main memory (i.e. not all RAMs, read and write operations))

**Regarding Claim 25**, Heider discloses the computing system, as recited in claim 23, wherein said secured switch control unit comprises a memory adapted to store control

command to complete switches between said first status and said second status, and a unit forbidding to access read-only memory in the computing system, to ensure that the only programs stored in the stated memory can be executed in the switching process. (see Heider col. 13, lines 48-49: switch operation performed; col. 17, lines 13-16; col. 16, lines 44-48: switching operations performed by software, programs; col. 6, lines 29-40: console (i.e. CPU) program, in console memory (i.e. ROM), not in main memory (i.e. not all RAMs, read and write operations)

**Regarding Claim 26**, Heider discloses a method of securely switching at least two statuses of a computing system operating by a first operating system which stores a first data set, and a second operating system which stores a second data set respectively, wherein said method comprises the steps of:

- (a) receiving a request for switching said computing system from a first status to a second status by a command input unit; (see Heider col. 5, lines 44-46; col. 16, lines 15-17: request/response (i.e. command) mechanism for switch; col. 13, lines 48-49: state switch capability) and
- (b) in response to said request, switching said computing system between a first status and a second status by a switch control unit through a single central processing unit of said computing system, wherein in said first status, said central processing unit allows uninterrupted (see Heider col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) utilized to process command(s)) and sole access to said first data set of said first operating system while prohibiting access of said

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second data set of said second operating system, wherein in said second status, said central processing unit is switched to allow uninterrupted and sole access to said second data set of said second operating system while prohibiting access to said first data set from said first operating system, so that said computing system is adapted to operate between said two status independently with each other and with maximum security between said first and said second status. (see Heider col. 5, lines 53-63; col. 13, lines 48-49: perform switch, from one state to another state; col. 14, lines 18-24; col. 14, lines 39-40: switch operation completed)

No disclosure for claims limitations: independent, securely separated, prohibiting access, and sole access.

**Regarding Claim 27**, Heider discloses the method, as recited in claim 26, further comprising a step, in between said step (a) and said step (b), of verifying an identification of a user executing said request for switching between said first and said second status, wherein said switching between said first and said second status is only carried out when said request is legitimate, wherein when said identification of said user is verified, a non- interruptible NMI is sent to trigger switching between said first status and said second status. (see Heider col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) utilized in processing reset)

**Regarding Claim 28**, Heider discloses the method, as recited in claim 27, further

comprising a step of masking a switching function between said first and said second status when one of said first and said second status is switched to said remaining status, so as to minimize a possibility of said status being switched illegitimately. (see Heider col. 14, lines 15-17: non-maskable interrupt (i.e. NMI) utilized in processing reset)

**Regarding Claim 29**, Heider discloses the method, as recited in claim 28, further comprising a step of ensuring that said response to switching status is executed only by a prearranged control program so as to prohibit illegitimate switching of said first and said second status. (see Heider col. 16, lines 44-48; col. 17, lines 13-16: only software, program perform requests (i.e. commands) within console memory, applications in main memory cannot process console commands)

**Regarding Claim 30**, Heider discloses the method, as recited in claim 29, wherein step (c) comprises a sub-step of saving said data set of said corresponding status before said status is switched to another of said statuses of said computing system. (see Heider col. 17, line 63 - col. 18, line 4: command capability; col. 13, lines 48-49: switch (i.e. on-off, ON state, and console state) capability; col. 15, lines 64-67: save state information for resumption)

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in



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this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlton V. Johnson whose telephone number is 571-270-1032. The examiner can normally be reached on Monday thru Friday , 8:00 - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Carlton V. Johnson  
Examiner  
Art Unit 2136



CVJ

September 4, 2007

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